

THE REALITY OF ANTIBIOTIC USE IN ANIMALS IN EUROPE



We often hear sentences like “**Animals consume 70% of all antibiotics**” But what does this mean exactly, and is it true?

It’s certainly a **great shock figure** that is often quoted, but the calculations – made many years ago – use **gross tonnage** to get this figure. Today this is considered a **poor way to compare the use of antibiotics in humans and animals**.

If you look instead at the more realistic population biomass-corrected calculation, the most recent data available indicates a **lower consumption of antibiotics in livestock than in people** in EU countries.

Let’s not forget both the potency of the antibiotics used and the patient biomass

Gross tonnage as a measurement does not consider two very important factors: the **potency of the antibiotic** and the **biomass**. The newer antibiotics which are more widely used in **human medicine** are more potent and thus **require a lower dose** than the older antibiotics commonly used in **veterinary medicine**. In other words, one ‘therapeutic dose’ of the newer **antibiotics commonly used in human medicine weighs less** than the equivalent ‘therapeutic dose’ of the older antibiotics commonly used in veterinary medicine.

Moreover, the **dose of an antibiotic** is calculated based on the patient’s **body weight**. Therefore, a **650 kg dairy cow would need a much larger dose than an 80 kg person**. Animal numbers also play their part. For instance, although weighing much less, **chickens are far more numerous**, with billions of chickens being produced for consumption in the EU every year. Because of this a measurement correcting for population and body weight such as, **milligrammes of antibiotic per kilogramme of body weight** (mg/kg body weight) or mg/PCU (population correction unit) as used by the EMA is a better measurement of the quantity used.

Less antibiotics for food-producing animals than for humans

The European Food Safety Authority (**EFSA**), the European Medicines Agency (**EMA**) and the European Centre for Disease Prevention and Control (**ECDC**) recently published their [fourth joint inter-agency report](#) on **integrated analysis of data on antimicrobial consumption** and resistance in bacteria from humans and food-producing animals in Europe for 2019-2021. Experts from the three EU agencies state in the report that between 2014 and 2021, the **mean total antimicrobial consumption in mg per kg food-producing animals decreased by 44%**, while in humans, it remained relatively stable. Figure 8 from the report shows the consumption as higher in humans than animals in the EU for a number of years now.

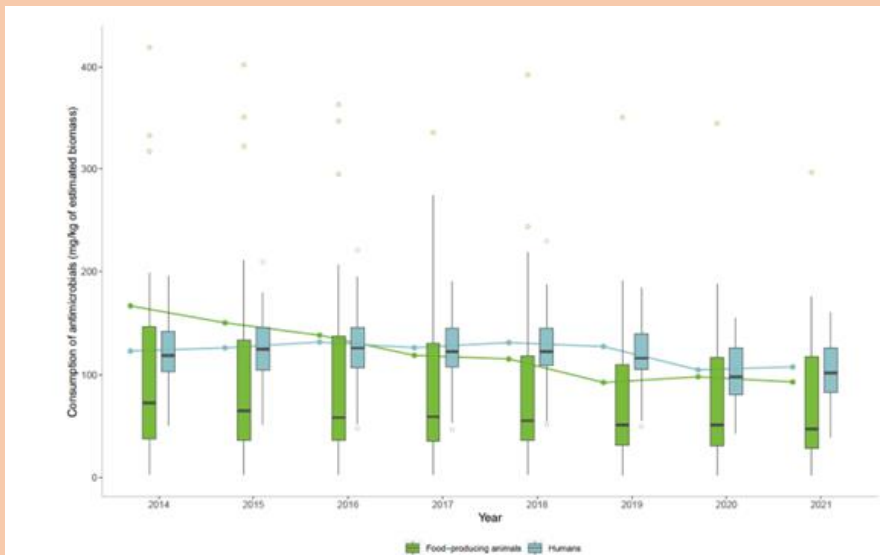


FIGURE 8 Population-weighted mean of the total consumption of antimicrobials in humans^a and food-producing animals^b in 26 EU/EEA countries^c for which data were available both for humans and food-producing animals, mg per kg of estimated biomass, 2014–2021.

The **significant fall in antibiotic use in food-producing animals** suggests that the measures taken at the country level to reduce the need to use antibiotics are proving effective.

The report also shows that in food-producing animals, **statistically significant reductions** in the consumption of 3rd- and 4th-generation cephalosporins,

quinolones, polymyxins, aminopenicillins and tetracyclines were registered during 2014–2021 in at least one quarter of countries analysed. This is a positive One Health development, as polymyxins are often used in hospitals to treat patients infected with **multidrug-resistant bacteria**, and 3rd- and 4th-generation cephalosporins and quinolones are also on the [EMA priority list](#) for human health.

In the EU, a massive reduction in veterinary antimicrobial use

In November 2023, the **EMA reported a 53% decline between 2011 to 2022**. According to the 2022 European Surveillance of Veterinary Antimicrobial Consumption (**ESVAC**) report, the aggregated sales for the 27 EU Member States were 84.8 mg/PCU, which corresponds to a reduction of 33.5 mg/PCU (28.3%) in comparison to the 2018 reference value behind the 50% reduction target set in the EU Farm to Fork Strategy. This means Member States have **already made significant progress towards the reduction target set for 2030**.

And Europe is not alone in **reducing the use of antibiotics in animals**. [The 2023 annual report](#) on Antimicrobial Agents Intended for Use in Animals from the World Organisation for Animal Health (**WOAH**) confirms that [the global use of antimicrobials in animals fell by 13% between 2017 to 2019](#).

